

BOZEMAN FAA AIRPORT

GALLATIN COUNTY

The Bozeman airport is located about 7 miles northwest of Bozeman at 45 46 48 N and 111 09 00 W (Site No. 51 on Map II-1). Elevation at the airport is 4,468 feet. Meteorological data were collected at this site for several years by the Federal Aviation Administration.

These data, primarily collected for aviation and weather forecasting uses, consist of short-term (5 minutes or less) averages of wind speed and direction, as well as other meteorological parameters. Data were gathered once per hour. The data have been analyzed by Battelle Pacific Northwest Laboratories. Because of a change in anemometer height, the Battelle data set was split into two parts for analysis: January 1, 1948, through April 27, 1951; and April 28, 1951, through December 31, 1954. Data from the latter period only were chosen for inclusion in the *Montana Wind Energy Atlas*.

The data set for Bozeman consists of summaries derived from hourly observations made from April 28, 1951, through December 31, 1954. The anemometer was mounted on a rooftop at a height of 13.1 meters. The site is representative of the lower Gallatin River valley from Bozeman to Belgrade.

Average annual wind speed was 7.8 miles per hour. Monthly wind speeds ranged from an average of 6.7 miles per hour in November and December to an average of 9.4 miles per hour in April.

Average monthly wind power ranged from 47.0 watts/m² in October to 96.0 watts/m² in April and May. Average annual wind power was 71.0 watts/m².

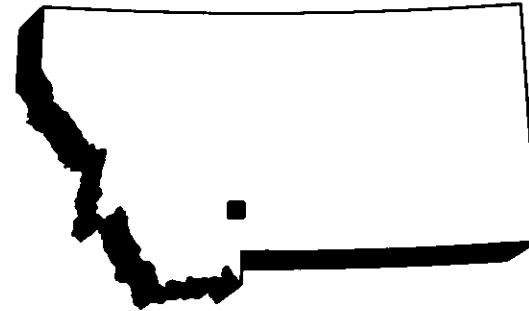


Table IV - 63
Monthly Wind Speed Distribution
GALLATIN COUNTY - BOZEMAN FAA AIRPORT
04/28/51 - 12/31/54

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
CALM (<1.1)	7.8	8.5	7.0	3.3	2.9	4.8	4.1	3.8	4.6	7.5	10.8	10.8	6.3	CALM (<0.5)
1.1- 3.1	4.9	4.0	3.5	2.5	3.1	3.9	4.5	4.3	3.7	7.1	8.2	7.3	4.8	0.5- 1.4
3.4- 5.4	28.6	26.9	26.4	23.9	25.1	27.4	29.4	29.9	27.9	31.3	30.7	30.7	28.3	1.5- 2.4
S 5.6- 7.6	15.0	14.4	16.9	14.0	13.8	15.1	15.2	17.1	16.5	17.4	16.3	16.7	15.8	2.5- 3.4
P 7.8- 9.8	11.3	13.2	15.0	12.9	14.1	12.7	13.7	14.4	13.7	11.9	11.1	11.3	12.9	3.5- 4.4
E 10.1-12.1	12.7	14.5	15.9	19.4	19.4	16.9	17.9	16.5	17.4	13.8	10.8	10.9	15.5	4.5- 5.4
E 12.3-14.3	4.8	4.9	4.5	6.0	5.4	5.6	5.1	4.9	5.6	4.4	3.5	3.2	4.8	5.5- 6.4
D 14.5-16.6	3.5	3.7	3.6	5.5	5.1	4.8	3.8	3.3	3.5	2.2	2.2	2.6	3.6	6.5- 7.4
16.8-18.8	4.1	3.7	2.7	5.0	4.1	3.8	2.5	2.6	2.7	1.7	2.4	2.7	3.1	7.5- 8.4
M 19.0-21.0	2.7	2.1	2.1	2.9	2.2	1.7	1.4	1.1	1.3	0.8	1.1	1.5	1.7	8.5- 9.4
I 21.3-23.3	1.3	1.2	1.1	1.7	1.6	0.9	0.8	0.6	0.9	0.5	1.0	0.7	1.0	9.5-10.4
L 23.5-25.5	1.6	1.1	0.8	1.3	1.5	1.2	0.8	0.6	1.1	0.7	0.5	0.5	1.0	10.5-11.4
E 25.7-27.7	1.0	0.4	0.3	1.0	0.8	0.6	0.2	0.6	0.6	0.2	0.8	0.5	0.6	11.5-12.4
S 28.0-30.0	0.4	0.6	0.2	0.2	0.3	0.2	0.1	0.1	0.3	0.2	0.3	0.2	0.3	12.5-13.4
/ 30.2-32.2	0.1	0.3	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	13.5-14.4
H 32.4-34.4	0.1	0.3	0.0	0.2	0.2	0.1	0.2	0.0	0.1	0.1	0.2	0.2	0.1	14.5-15.4
O 34.7-36.7	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5-16.4
U 36.9-38.9	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	16.5-17.4
R 39.1-41.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.5-18.4
41.4-43.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5-19.4
43.6-45.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5-20.4
45.9-56.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5-25.4
57.0-68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.5-30.4
68.2-79.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5-35.4
79.4-90.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5-40.4
>90.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	>40.4
AVERAGE														
SPEED (MPH)	8.1	8.3	7.8	9.4	9.2	8.3	7.8	7.8	8.1	6.9	6.7	6.7	7.8	
AVERAGE														
SPEED (M/SEC)	3.6	3.7	3.5	4.2	4.1	3.7	3.5	3.5	3.6	3.1	3.0	3.0	3.5	
AVERAGE														
WIND POWER	89.0	92.0	67.0	96.0	96.0	74.0	60.0	59.0	72.0	47.0	60.0	61.0	71.0	
(WATTS/M**2)														

ANEMOMETER HEIGHT = 43.0 FEET = 13.1 METERS

SOURCE: BATTELLE PACIFIC NORTHWEST LABORATORIES